



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,205	11/06/2001	Hubert F. Metzger	054726-0115	1566
26371	7590	03/11/2005	EXAMINER	
FOLEY & LARDNER 777 EAST WISCONSIN AVENUE SUITE 3800 MILWAUKEE, WI 53202-5308			WILKINS III, HARRY D	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/992,205

Applicant(s)

METZGER, HUBERT F.

Examiner

Harry D Wilkins, III

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-15 and 22-99 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 66-74, 98 and 99 is/are allowed.
- 6) ☒ Claim(s) 11-15, 22-31, 34-37, 39-49, 52, 53, 60, 65 and 75-97 is/are rejected.
- 7) ☒ Claim(s) 32, 33, 38, 50, 51, 54-59 and 62-64 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/17/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 17 November 2004 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 22 recites the limitation "the device" in line 1. There is insufficient antecedent basis for this limitation in the claim. Based on the specification as filed (particularly paragraph 67 (see PGPub 2003/0006133)), "the device" is meant to add further subject matter to the scope of claim 11. Claim 22 should be amended to recite "of claim 11 further comprising a valve controlled...". The valve is not the "means for maintaining a level of plating solution in the plating tank:".

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 11-15 and 23, 39-49, 52, 53, 60, 61, 65, 75-77 and 80-97 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 and 18 of U.S. Patent No. 6,547,936 in view of Metzger (US 4,331,527).

The scope of claim 10 (dependent from claim 1) of the '936 patent is identical to the scope of present claim 11 with the exception of the part to be electroplated being a rotogravure cylinder. However, as taught by Metzger at col. 1, lines 10-14, electroplating of rotogravure cylinders was known in the prior art. Therefore, it would have been obvious to one of ordinary skill in the art to have used the electroplating apparatus of the '936 patent for electroplating a rotogravure cylinder since it was capable of electroplating any desired shape.

Present claims 12-15 are identical to claims 11-14 of the '936 patent.

Regarding present claim 23, claim 15 of the '936 patent teaches adding a sensor array. However, the claim is silent as to the function of the sensor array. In the '936 patent, at col. 7, lines 39-56, the sensor array is defined as detecting the concentration of the plating solution and providing a signal representative thereof to a controller.

Regarding present claim 39, claims 1 and 10 of the '936 patent disclose each and every limitation of the present claim.

Regarding present claims 40 and 42, claim 11 of the '936 patent discloses adding a fluid heating system and a fluid cooling system. These systems would have been capable of operating to maintain the solution at a temperature of 30-35°C.

Regarding present claim 41, this claim is related to the manner of operating the claimed apparatus and thus is not given patentable weight. The apparatus of the claims of the '936 patent was fully capable of plating copper.

Regarding present claim 43, this claim is related to the manner of operating the claimed apparatus and thus is not given patentable weight. The apparatus of the claims of the '936 patent was fully capable of refreshing the plating solution by adding metal ions into the second tank.

Regarding present claim 44, claim 10 of the '936 patent teaches adding a pump to pump plating solution from the holding tank to the plating tank.

Regarding present claim 45, claim 7 of the '936 patent teaches including a plurality of anode conducting portions.

Regarding present claim 46, since the second pump performs the exact same operation as the first pump, it would have been obvious to one of ordinary skill in the art to have duplicated the first pump to increase throughput of the system.

Regarding present claim 47, this claim is related to the manner of operating the claimed apparatus and thus is not given patentable weight. The apparatus of the claims of the '936 patent was fully capable of plating copper and was fully capable of refreshing the plating solution by adding metal ions into the second tank.

Regarding present claims 48 and 49, claim 12 of the '936 patent teaches adding a filter between the plating tank and the holding tank for filtering the plating solution being transferred from the holding tank to the plating tank.

Regarding present claims 52 and 53, claim 15 of the '936 patent teaches adding a sensor array. However, the claim is silent as to the function of the sensor array. In the '936 patent, at col. 7, lines 39-56, the sensor array is defined as detecting the concentration of the plating solution and providing a signal representative thereof to a controller.

Regarding present claim 60, the anode of the '936 patent were capable of operating at a current density of 12 amperes per square inch.

Regarding present claim 61, this claim is related to the manner of operating the claimed apparatus and thus is not given patentable weight. The apparatus of the claims of the '936 patent was fully capable of plating chromium.

Regarding present claim 65, claim 18 of the '936 patent teaches rotatably supporting a cylinder in the plating tank. The specification, at col. 6, lines 16-23, this

Art Unit: 1742

rotation was imparted by a motor. Therefore, the apparatus of the '936 patent inherently included a motor configured to rotate the cylinder. The motor of the '936 patent was fully capable of operating at 120-220 rpms.

Regarding present claim 75, claim 1 of the '936 patent fully discloses each element of this claim.

Regarding present claim 76, this claim is related to the manner of operating the claimed apparatus and thus is not given patentable weight. The apparatus of the claims of the '936 patent was fully capable of plating an additional layer while deplating a first layer.

Regarding claim 77, claims 1-5 of the '936 patent disclose an electrode that is exposed to the plating solution and is non-dissolvable therein and is formed as a layer between the plating solution and a conductive core formed from a material that is different from the material of the cathode.

Regarding present claim 80, claim 18 of the '936 patent teach an apparatus for electroplating a rotogravure cylinder including a tank adapted to receive the cylinder partially disposed in a plating solution and a plurality (at least one) non-dissolvable anodes connectable to a current source and configured to be at least partially disposed with the plating solution and (in claim 4) are arranged around the side of the cylinder.

Regarding present claims 81-84, 86 and 89-93, it would have been obvious to one of ordinary skill in the art to have arranged the anodes at any desired position to provide the desired interaction between the anodes and cylinder.

Art Unit: 1742

Regarding present claims 85, 87 and 88, Metzger teaches (see col. 1, lines 63-65) attaching current-carrying rails which (see figure) are parallel to the cylinder adjacent to and coupled to the anodes. Therefore, it would have been obvious to one of ordinary skill in the art to have used such rails to provide electrical contact to the anodes of the '936 patent.

Regarding present claim 94, it would have been obvious to one of ordinary skill in the art to have arranged the plurality of anodes in any desired configuration, such as on the same side of an imaginary vertical plane extending through the center of the cylinder.

Regarding present claim 95, it would have been obvious to one of ordinary skill in the art to have added as many anodes as was found necessary.

Regarding present claim 96, it would have been obvious to one of ordinary skill in the art to have provided a space between the anodes.

Regarding present claim 97, it would have been within the expected skill of a routineer in the art to have arranged additional anodes on the opposite side of the plane in order to optimally control the electroplating process.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1742

8. Claims 24-31 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metzger (US 4,331,527) in view of Hughes et al (US 4,908,242).

[As a first note, the subject matter of a controller configured to control the operation of the apparatus is granted an effective filing date of June 30, 1999 (09/345,263) which is the oldest parent application containing reference to a controller that controls the concentration of the metal ions in solution.]

Metzger teaches (see figures and col. 1, line 31 to col. 2, line 34) a system for electroplating a rotogravure cylinder including an apparatus configured to plate the cylinder including a non-dissolvable (inherent) anode and a tank configured to receive the cylinder.

However, Metzger does not teach adding a controller for controlling operation of the apparatus.

Hughes et al teach (see Example 11) adding a controller to an electroplating process including a controller that maintains the metal ion concentration of the plating solution by adding a sensor to detect the metal ion concentration and selectively adding components to maintain the preset desired composition.

Therefore, it would have been obvious to one of ordinary skill in the art to have added a controller as taught by Hughes et al to the apparatus of Metzger because the controller allows for better control of the electroplating process.

Regarding claim 27, the metal ion concentration is a parameter relating to the ability of the apparatus to plate metal onto the cylinder.

Regarding claims 30 and 31, the addition of the components would inherently be done by opening a valve connecting a container for the component and the plating tank.

Regarding claim 37, Metzger teaches (see col. 1, lines 56-59) supporting the cylinder and allowing for its rotation by a suitable power device. A motor was a well known suitable power device for rotating a cylinder. A motor would have been capable of being configured to rotate the cylinder at any desired rate, including 150-220 rpms.

9. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metzger in view of Hughes et al as applied to claims 24-31 and 37 above, and further in view of Francis (US 4,425,212).

The teachings of Metzger in view of Hughes et al are described above.

However, Metzger in view of Hughes et al do not teach adding a heater or cooler for controlling the temperature of the plating solution.

Francis teaches (see col. 3, lines 34-37 and col. 4, lines 2-5) including a heater and controller in an electroplating apparatus for maintaining the temperature of the electrolyte.

Therefore, it would have been obvious to one of ordinary skill in the art to have added a heater as taught by Francis to the system of Metzger and Hughes et al because the heater allows for control of the temperature of the plating solution.

Regarding claim 35, this claim is related to the manner of operating the claimed apparatus and thus is not given patentable weight. The apparatus of the claims of the '936 patent was fully capable of plating copper.

Allowable Subject Matter

10. Claims 66-74, 98 and 99 are allowed.
11. Claims 32, 33, 38, 50, 51, 54-59, 62-64 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. Claim 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
13. The following is a statement of reasons for the indication of allowable subject matter:

Re claim 22, the claims of the '936 patent do not teach adding a valve controlled by a controller configured to refreshing the plating solution.

Re claim 38, Metzger (4,331,527) does not teach a second tank, nor a pump configured to pump plating solution from the second tank to the first (plating) tank.

Re claim 50, the claims of the '936 patent do not teach a feeder for supplying a substance to the second tank.

Re claim 54, the claims of the '936 patent do not teach adding a controller coupled to the sensor array.

Re claims 32 and 57, the claims of the '936 patent nor Metzger (4,331,527) do not teach that the positioning of the anode is adjustable.

Re claims 62 and 66, the claims of the '936 patent do not teach a source (container) fluidly coupled to the tank that is configured to receive a material that

Art Unit: 1742

refreshes the plating solution. The holding tank of claim 10 is not configured as a source.

Re claim 78, the claims of the '936 patent do not teach including an electrode that contains a material dissolvable in the plating solution.

Re claims 98 and 99, the claims of the '936 patent do not teach an electrically conductive mesh as part of the anode system.

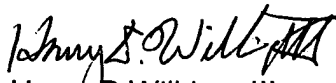
Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-Th 10am-8:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hdw


Harry D Wilkins, III
Examiner
Art Unit 1742


ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700